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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,347	04/19/2004	Shwin-Chung Wong	Wong 9301 CIP	9473
7590	10/06/2006		EXAMINER	
HungChang Lin 8 Schindler Ct. Silver Spring, MD 20903			WALBERG, TERESA J	
			ART UNIT	PAPER NUMBER
			3744	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/826,347

Applicant(s)

WONG, SHWIN-CHUNG

Examiner

Teresa J. Walberg

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-13, 16-20, 23 and 26 is/are rejected.
- 7) ☒ Claim(s) 8-10, 14, 15, 21, 22, 24, 25, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/19/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6, 11, 16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Batchelder (6,019,165).

Batchelder discloses a heat sink for a heat generating device as claimed including (see Fig. 2) an enclosed metal chamber (20), to be in contact with a heat generating device (2), a two phase vaporizable coolant (see col. 3, lines 42-44) recycled in the chamber (20) to remove heat from the heat generating device (2), a flow path having an upper section and a lower section (Fig. 2), the sections being separated by an isolation plate and connected by a conveying conduit (at 60) at ends for the coolant to flow from the upper section (adjacent 26) to the lower section (adjacent 24), the upper section being in contact with the inner top wall of the chamber (at 26), the lower section (at 24) functioning as part of the recycling passage for coolant, a wick evaporator (note that fin array 52 would inherently function as a wick) in contact with the lower section (at 24) to draw in the coolant from the lower section of the flow path by capillary attraction.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder (6,019,165) in view of Bakke (2003/0136551).

Batchelder discloses a heat sink as claimed, with the exception of a wick formed of metal powder. Bakke teaches using sintered copper powder as a wick in a heat transfer system using a two phase coolant (see para. 0013). It would have been obvious in view of Bakke to use a sintered copper powder as a wick in the heat sink of Batchelder, the motivation being to obtain improved movement of the heat transfer fluid.

5. Claims 5, 7, 18, 20, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder (6,019,165) in view of Ishida et al (6,725,910).

Batchelder discloses a heat sink as claimed, with the exception of a wick formed of a metal mesh and grooves having a rectangular cross section. Ishida et al teach forming a wick of a metal mesh (see col. 11, lines 5-7) or of grooves having a rectangular cross section (see embodiment of Fig. 2). It would have been obvious in view of Ishida et al to use a wick formed of a metal mesh or grooves having a rectangular cross section in the heat sink of Batchelder, the motivation being to obtain improved movement of the heat transfer fluid.

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6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder (6,019,165) in view of Cho et al (US 2003/0106671).

Batchelder discloses a heat sink as claimed, with the exception of a wick formed of an array of pins. Cho et al teach forming a wick of an array of pins (see para. 0046). It would have been obvious in view of Cho et al to use a wick formed of an array of pins in the heat sink of Batchelder, the motivation being to obtain improved movement of the heat transfer fluid.

7. Claims 13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder (6,019,165) in view of Sugito (6,681,843).

Batchelder discloses a heat sink as claimed, with the exception of the chamber being in a vertical position. Sugito teaches positioning a heat transfer chamber in a vertical position (see Fig. 1). It would have been obvious in view of Sugito to use the heat sink of Batchelder in a vertical position, the motivation being to enable better fitting to heat sink to the available space.

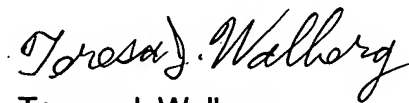
8. Claims 8-10, 14, 15, 21, 22, 24, 25, 27, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw